Amendments to the CLAIMS:

Without prejudice, this listing of the claims replaces all prior versions and listings of the claims in the present application:

LISTING OF CLAIMS:

1. (Currently Amended) A method for embedding digital watermark data in digital data contents, said method comprising the steps of:

receiving said digital data contents and said digital watermark data;

dividing said digital data contents into block data;

obtaining a frequency coefficient of said block data by performing an orthogonal transform;

obtaining a complexity of said block data by performing a wavelet transform;

obtaining an amount of transformation of said frequency coefficient from said complexity and said digital watermark data by using a quantization width such that the larger said complexity is, the larger said amount of transformation is;

embedding said digital watermark data in said digital data contents by transforming said frequency coefficient by said amount; and

generating watermarked digital data contents.

2. (Original) The method as claimed in claim 1, said step of obtaining said complexity of said block data comprising the steps of:

transforming said block data, by applying a wavelet transform, into coefficients of said wavelet transform, and

obtaining said complexity on the basis of the number of high frequency coefficients in said coefficients of said wavelet transform, each of said high frequency coefficients exceeding a threshold.

3. (Currently Amended) A method for embedding digital watermark data in digital data contents, said method comprising the steps of:

receiving said digital data contents and said digital watermark data;

dividing said digital data contents into block data;

obtaining a frequency coefficient of said block data by performing an orthogonal transform;

obtaining an amount of transformation of said frequency coefficient from said digital watermark data by using a quantization width corresponding to said frequency coefficient, said quantization width being obtained beforehand according to a manipulation method of said digital data contents based on difference values of frequency coefficients, obtained by using an orthogonal transform, between block data of original image data and block data that is obtained by manipulating said block data of said original image data with said manipulation, wherein said amount of transformation is obtained such that the larger a change amount of said digital data contents due to processing by said manipulation method is, the larger said amount of transformation is;

embedding said digital watermark data in said digital data contents by transforming said frequency coefficient by said amount; and

generating watermarked digital data contents.

4. (Original) The method as claimed in claim 3, wherein said quantization width is obtained by a method comprising the steps of:

dividing first digital data contents into one or a plurality of first block data;

dividing second digital data contents into one or a plurality of second block data, said second digital data contents being obtained by manipulating said first digital data contents with a predetermined manipulation method;

transforming said first block data and said second block data into first frequency coefficients and second frequency coefficients respectively by applying an orthogonal transform;

obtaining difference values between said first frequency coefficients and said second frequency coefficients for each frequency coefficient;

calculating a standard deviation of distribution of said difference values; and

obtaining said quantization width by multiplying said standard deviation by a watermark embedding strength.

5. (Withdrawn) A method for reading digital watermark data embedded in digital data contents, said method comprising the steps of:

receiving said digital data contents;

dividing said digital data contents into block data;

obtaining a frequency coefficient of said block data; and

generating digital watermark data from said frequency coefficient by using a quantization width corresponding to said frequency coefficient, said quantization width being obtained beforehand according to a manipulation method of said digital data contents.

6. (Withdrawn) The method as claimed in claim 5, wherein said quantization width is obtained by a method comprising the steps of:

dividing first digital data contents into one or a plurality of first block data;

dividing second digital data contents into one or a plurality of second block data, said second digital data contents being obtained by manipulating said first digital data contents with a predetermined manipulation method;

transforming said first block data and said second block data into first frequency coefficients and second frequency coefficients respectively by applying an orthogonal transform;

obtaining difference values between said first frequency coefficients and said second frequency coefficients for each frequency coefficient;

calculating a standard deviation of distribution of said difference values; and

obtaining said quantization width by multiplying said standard deviation by a watermark embedding strength.

7. (Currently Amended) An apparatus for embedding digital watermark data in digital data contents, said apparatus comprising:

a computer readable medium having program code executable by a processor, including:

program code for performing the following:

~~means for~~ receiving said digital data contents and said digital watermark data;

~~means for~~ dividing said digital data contents into block data;

~~means for~~ obtaining a frequency coefficient of said block data by performing an orthogonal transform;

~~means for~~ obtaining a complexity of said block data by performing a wavelet transform;

~~means for~~ obtaining an amount of transformation of said frequency coefficient from said complexity and said digital watermark data by using a quantization width such that the larger said complexity is, the larger said amount of transformation is;

~~means for~~ embedding said digital watermark data in said digital data contents by transforming said frequency coefficient by said amount; and

~~means for~~ generating watermarked digital data contents.

8. (Currently Amended) The apparatus as claimed in claim 7, said ~~means for~~ obtaining of said complexity of said block data comprising:

~~means for~~ transforming said block data, by applying a wavelet transform, into coefficients of said wavelet transform, and

~~means for~~ obtaining said complexity on the basis of the number of high frequency coefficients in said coefficients of said wavelet transform, each of said high frequency coefficients exceeding a threshold.

9. (Currently Amended) An apparatus for embedding digital watermark data in digital data contents, said apparatus comprising:

a computer readable medium having program code executable by a processor, including:

program code for performing the following:

~~means for~~ receiving said digital data contents and said digital watermark data;

means for dividing said digital data contents into block data;

~~means for~~ obtaining a frequency coefficient of said block data by performing an orthogonal transform;

~~means for~~ obtaining a complexity of said block data;

~~means for~~ obtaining an amount of transformation of said frequency coefficient from said digital watermark data by using a quantization width corresponding to said frequency coefficient, said quantization width being obtained beforehand according to a manipulation method of said digital data contents based on difference values of frequency coefficients, obtained by using an orthogonal transform, between block data of original image data and block data that is obtained by manipulating said block data of said original image data with said manipulation;

~~means for~~ embedding said digital watermark data in said digital data contents by transforming said frequency coefficient by said amount; and

~~means for~~ generating watermarked digital data contents;

wherein said amount of transformation is obtained such that the larger a change amount of said digital data contents due to processing by said manipulation method is, the larger said amount of transformation is.

10. (Currently Amended) The apparatus as claimed in claim 9, wherein said quantization width is obtained by performing the following ~~means comprising~~:

~~means for~~ dividing first digital data contents into one or a plurality of first block data;

~~means for~~ dividing second digital data contents into one or a plurality of second block data, said second digital data contents being obtained by manipulating said first digital data contents with a predetermined manipulation method;

~~means for~~ transforming said first block data and said second block data into first frequency coefficients and second frequency coefficients respectively by applying an orthogonal transform;

~~means for~~ obtaining difference values between said first frequency coefficients and said second frequency coefficients for each frequency coefficient;

~~means for~~ calculating a standard deviation of distribution of said difference values; and

~~means for~~ obtaining said quantization width by multiplying said standard deviation by a watermark embedding strength.

11. (Withdrawn) An apparatus for reading digital watermark data embedded in digital data contents, said apparatus comprising:

means for receiving said digital data contents;

means for dividing said digital data contents into block data;

means for obtaining a frequency coefficient of said block data; and

means for generating digital watermark data from said frequency coefficient by using a quantization width corresponding to said frequency coefficient, said quantization width being obtained beforehand according to a manipulation method of said digital data contents.

12. (Withdrawn) The apparatus as claimed in claim 11, wherein said quantization width is obtained by means comprising:

means for dividing first digital data contents into one or a plurality of first block data;

means for dividing second digital data contents into one or a plurality of second block data, said second digital data contents being obtained by manipulating said first digital data contents with a predetermined manipulation method;

means for transforming said first block data and said second block data into first frequency coefficients and second frequency coefficients respectively by applying an orthogonal transform;

means for obtaining difference values between said first frequency coefficients and said second frequency coefficients for each frequency coefficient;

means for calculating a standard deviation of distribution of said difference values; and

means for obtaining said quantization width by multiplying said standard deviation by a watermark embedding strength.

13. (Currently Amended) An integrated circuit for embedding digital watermark data in digital data contents, said integrated circuit comprising:

a computer readable medium having program code executable by a processor, including:

program code for performing the following:

~~means for~~ receiving said digital data contents and said digital watermark data;

~~means for~~ dividing said digital data contents into block data;

~~means for~~ obtaining a frequency coefficient of said block data by performing an orthogonal transform;

~~means for~~ obtaining a complexity of said block data by performing a wavelet transform;

~~means for~~ obtaining an amount of transformation of said frequency coefficient from said complexity and said digital watermark data by using a quantization width such that the larger said complexity is, the larger said amount of transformation is;

~~means for~~ embedding said digital watermark data in said digital data contents by transforming said frequency coefficient by said amount; and

~~means for~~ generating watermarked digital data contents.

14. (Currently Amended) The integrated circuit as claimed in claim 13, said ~~means for~~ obtaining said complexity of said block data comprising:

~~means for~~ transforming said block data, by applying a wavelet transform, into coefficients of said wavelet transform, and

~~means for~~ obtaining said complexity on the basis of the number of high frequency coefficients in said coefficients of said wavelet transform, each of said high frequency coefficients exceeding a threshold.

15. (Currently Amended) An integrated circuit for embedding digital watermark data in digital data contents, said integrated circuit comprising:

a computer readable medium having program code executable by a processor, including:

program code for performing the following:

~~means for~~ receiving said digital data contents and said digital watermark data;

~~means for~~ dividing said digital data contents into block data;

~~means for~~ obtaining a frequency coefficient of said block data by performing an orthogonal transform;

~~means for~~ obtaining a complexity of said block data;

~~means for~~ obtaining an amount of transformation of said frequency coefficient from said digital watermark data by using a quantization width corresponding to said frequency coefficient, said quantization width being obtained beforehand according to a manipulation method of said digital data contents based on difference values of frequency coefficients, obtained by using an orthogonal transform, between block data of original image data and block data that is obtained by manipulating said block data of said original image data with said manipulation;

~~means for~~ embedding said digital watermark data in said digital data contents by transforming said frequency coefficient by said amount; and

~~means for~~ generating watermarked digital data contents;

wherein said amount of transformation is obtained such that the larger a change amount of said digital data contents due to processing by said manipulation method is, the larger said amount of transformation is.

16. (Currently Amended) The integrated circuit as claimed in claim 15, wherein said quantization width is obtained by performing the following ~~means comprising~~:

~~means for~~ dividing first digital data contents into one or a plurality of first block data;

~~means for~~ dividing second digital data contents into one or a plurality of second block data, said second digital data contents being obtained by manipulating said first digital data contents with a predetermined manipulation method;

~~means for~~ transforming said first block data and said second block data into first frequency coefficients and second frequency coefficients respectively by applying an orthogonal transform;

~~means for~~ obtaining difference values between said first frequency coefficients and said second frequency coefficients for each frequency coefficient;

~~means for~~ calculating a standard deviation of distribution of said difference values; and

~~means for~~ obtaining said quantization width by multiplying said standard deviation by a watermark embedding strength.

17. (Withdrawn) An integrated circuit for reading digital watermark data embedded in digital data contents, said integrated circuit comprising:

means for receiving said digital data contents;

means for dividing said digital data contents into block data;

means for obtaining a frequency coefficient of said block data; and

means for generating digital watermark data from said frequency coefficient by using a quantization width corresponding to said frequency coefficient, said quantization width being obtained beforehand according to a manipulation method of said digital data contents.

18. (Withdrawn) The integrated circuit as claimed in claim 17, wherein said quantization width is obtained by means comprising:

means for dividing first digital data contents into one or a plurality of first block data;

means for dividing second digital data contents into one or a plurality of second block data, said second digital data contents being obtained by manipulating said first digital data contents with a predetermined manipulation method;

means for transforming said first block data and said second block data into first frequency coefficients and second frequency coefficients respectively by applying an orthogonal transform;

means for obtaining difference values between said first frequency coefficients and said second frequency coefficients for each frequency coefficient;

means for calculating a standard deviation of distribution of said difference values; and

means for obtaining said quantization width by multiplying said standard deviation by a watermark embedding strength.

19. (Currently Amended) A computer readable medium storing program code for causing a computer system to embed digital watermark data in digital data contents, said computer readable medium comprising:

program code means for receiving said digital data contents and said digital watermark data;

program code means for dividing said digital data contents into block data;

program code means for obtaining a frequency coefficient of said block data by performing an orthogonal transform;

program code means for obtaining a complexity of said block data by performing a wavelet transform;

program code means for obtaining an amount of transformation of said frequency coefficient from said complexity and said digital watermark data by using a quantization width such that the larger said complexity is, the larger said amount of transformation is;

program code means for embedding said digital watermark data in said digital data contents by transforming said frequency coefficient by said amount; and

program code means for generating watermarked digital data contents.

20. (Original) The computer readable medium as claimed in claim 19, said program code means for obtaining said complexity of said block data comprising:

program code means for transforming said block data, by applying a wavelet transform, into coefficients of said wavelet transform, and

program code means for obtaining said complexity on the basis of the number of high frequency coefficients in said coefficients of said wavelet transform, each of said high frequency coefficients exceeding a threshold.

21. (Currently Amended) A computer readable medium storing program code for causing a computer system to embed digital watermark data in digital data contents, said computer readable medium comprising:

program code means for receiving said digital data contents and said digital watermark data;

program code means for dividing said digital data contents into block data;

program code means for obtaining a frequency coefficient of said block data by performing an orthogonal transform;

program code means for obtaining a complexity of said block data;

program code means for obtaining an amount of transformation of said frequency coefficient from said digital watermark data by using a quantization width corresponding to said frequency coefficient, said quantization width being obtained beforehand according to a manipulation method of said digital data contents based on difference values of frequency coefficients, obtained by using an orthogonal transform, between block data of original image data and block data that is obtained by manipulating said block data of said original image data with said manipulation;

program code means for embedding said digital watermark data in said digital data contents by transforming said frequency coefficient by said amount; and

program code means for generating watermarked digital data contents;

wherein said amount of transformation is obtained such that the larger a change amount of said digital data contents due to processing by said manipulation method is, the larger said amount of transformation is.

22. (Previously Presented) The computer readable medium as claimed in claim 21, wherein said quantization width is obtained by means comprising:

program code means for dividing first digital data contents into one or a plurality of first block data;

program code means for dividing second digital data contents into one or a plurality of second block data, said second digital data contents being obtained by manipulating said first digital data contents with a predetermined manipulation method;

program code means for transforming said first block data and said second block data into first frequency coefficients and second frequency coefficients respectively by applying an orthogonal transform;

program code means for obtaining difference values between said first frequency coefficients and said second frequency coefficients for each frequency coefficient;

program code means for calculating a standard deviation of distribution of said difference values; and

program code means for obtaining said quantization width by multiplying said standard deviation by a watermark embedding strength;

wherein said amount of transformation is obtained such that the larger a change amount of said digital data contents due to processing by said manipulation method is, the larger said amount of transformation is.

23. (Currently Amended) A computer readable medium storing program code for causing a computer system to embed digital watermark data in digital data contents, said computer readable medium comprising:

program code means for receiving said digital data contents;

program code means for dividing said digital data contents into block data;

program code means for obtaining a frequency coefficient of said block data by performing an orthogonal transform; and

program code means for generating digital watermark data from said frequency coefficient by using a quantization width corresponding to said frequency coefficient, said quantization width being obtained beforehand according to a manipulation method of said digital data contents based on difference values of frequency coefficients, obtained by using an orthogonal transform, between block data of original image data and block data that is obtained by manipulating said block data of said original image data with said manipulation;

wherein said amount of transformation is obtained such that the larger a change amount of said digital data contents due to processing by said manipulation method is, the larger said amount of transformation is.

24. (Previously Presented) The computer readable medium as claimed in claim 23, wherein said quantization width is obtained by means comprising:

program code means for dividing first digital data contents into one or a plurality of first block data;

program code means for dividing second digital data contents into one or a plurality of second block data, said second digital data contents being obtained by manipulating said first digital data contents with a predetermined manipulation method;

program code means for transforming said first block data and said second block data into first frequency coefficients and second frequency coefficients respectively by applying an orthogonal transform;

program code means for obtaining difference values between said first frequency coefficients and said second frequency coefficients for each frequency coefficient;

program code means for calculating a standard deviation of distribution of said difference values; and

program code means for obtaining said quantization width by multiplying said standard deviation by a watermark embedding strength;

wherein said amount of transformation is obtained such that the larger a change amount of said digital data contents due to processing by said manipulation method is, the larger said amount of transformation is.

25-72. (Canceled).